

Temperature and storms

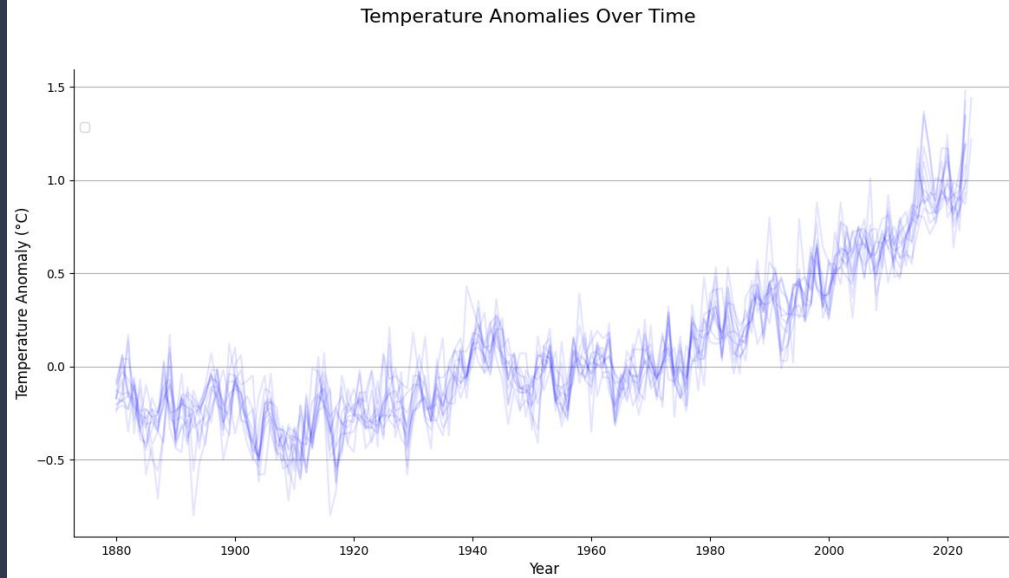
A glance at recent trends

A dark blue diagonal gradient bar that starts from the bottom left and extends towards the top right, covering the lower half of the slide.

Introduction

- Icebreaker: Would you prefer to be always hot or always cold?
- Today, we'll explore not just how the Earth is becoming warmer and warmer, but how these temperatures are fueling more and more storms
- By the end of today's class, you will be able to discuss trends in Earth's temperature and number of storms, and understand why it's important for us to act urgently against climate change

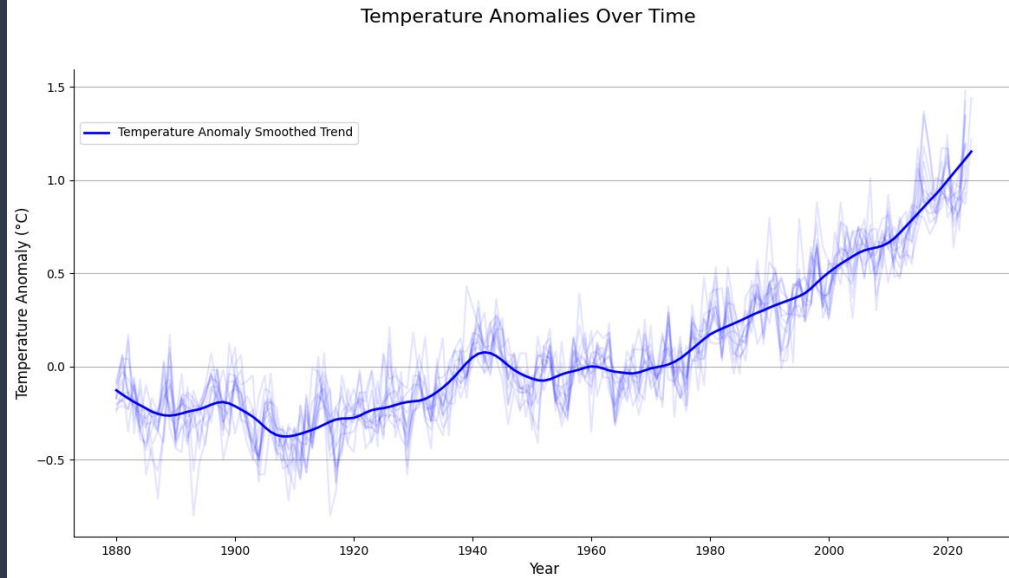
Temperature



Anomalies are temperature differences from the 1951-1980 average. For example, March 2024 will be compared to March, 1951-1980.

- This plot shows the temperature anomalies over time
 - This means the difference between the 1951-1980 average
- Overall, is the temperature decreasing, staying the same, or increasing?

Temperature

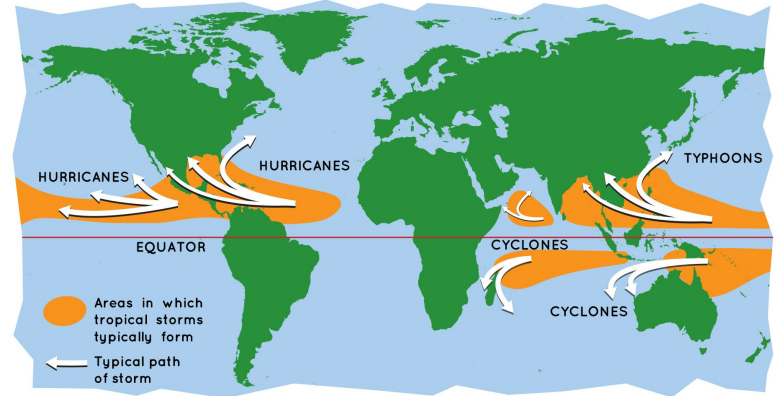


Anomalies are temperature differences from the 1951-1980 average. For example, March 2024 will be compared to March, 1951-1980.

- Correct, this trend line makes it easier to see: overall, the temperature is increasing
- Question: Does this mean that every year is warmer than the previous year?

Tropical Cyclones

- The term tropical cyclone includes hurricanes, typhoons, and cyclones
 - “Hurricane” comes from the Taino Native American word, “hurucane,” meaning evil spirit of the wind
 - “Typhoon” comes from the Chinese word “dàfēng,” meaning big wind
 - “Cyclone” comes the Greek word “kyklôn,” meaning to go in a circle
- Question: what do you think these storms have in common? How do they differ?



Tropical Cyclones



Hurricane Florence (2018) viewed from space

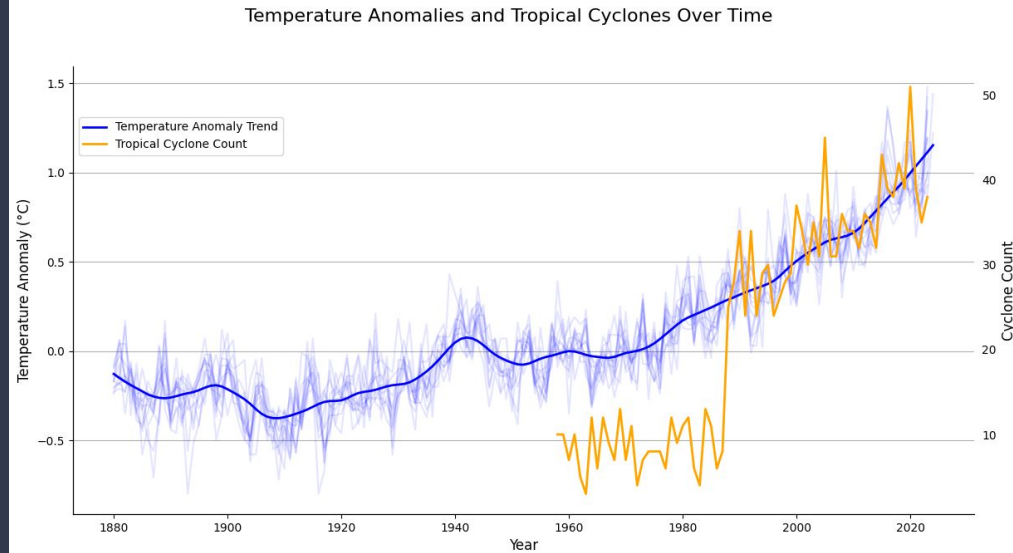
Source: <https://www.flickr.com/photos/gsfcr/42828603210/>



Cyclone Taukta (2021) hitting India's coast

Source: <https://www.gettyimages.com/detail/news-photo/waves-lash-over-onto-a-shoreline-in-mumbai-on-may-17-as-news-photo/1232946896>

Tropical Cyclones



Anomalies are temperature differences from the 1951-1980 average. For example, March 2024 will be compared to March, 1951-1980.

- Question: What does the orange line represent?
Hint: Look at the legend
- Question: Overall, is the number of tropical cyclones decreasing, staying the same, or increasing over time? How does this relate to the temperature trend?

Tornadoes

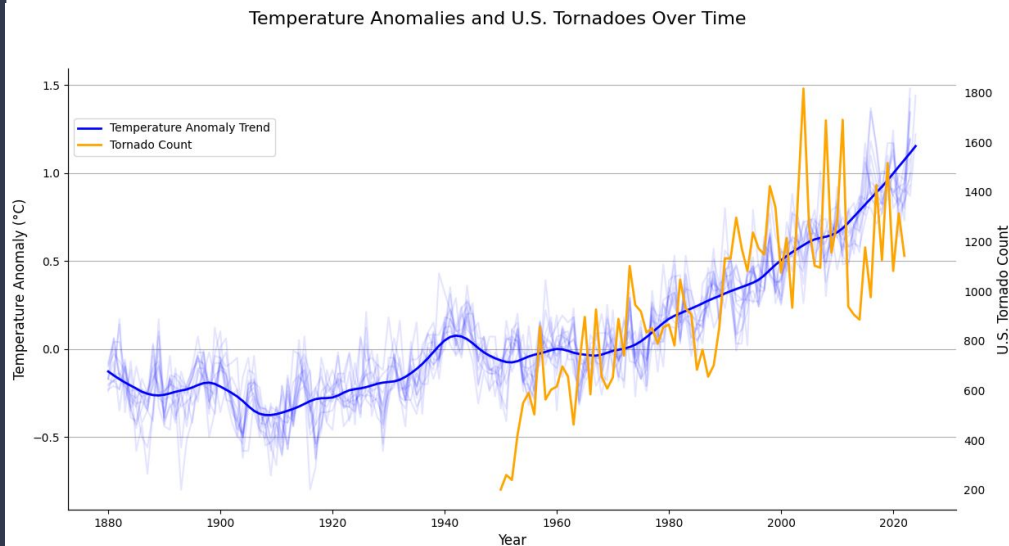
- The word “tornado” comes from the Spanish word “tronada” meaning thunderstorm
- Tornadoes are quickly rotating columns of air that are contacting the Earth and a cumulonimbus cloud



A tornado forming in Utah

Source: <https://www.abc4.com/utah-weather/utah-weather-stories/biggest-tornadoes-in-utah-of-the-past-decade/>

Tornadoes (in the United States)



Anomalies are temperature differences from the 1951-1980 average. For example, March 2024 will be compared to March, 1951-1980.

- Question: What does the orange line represent?
- Question: What is the overall U.S. tornado trend over time, and how does this compare to the temperature trend?

Putting it all together

- As temperature has increased, the number of tropical cyclones *and* the number of tornadoes in the U.S. have increased
- Think about how you and I can mitigate the effects of climate change...we'll discuss those thoughts next class!
- What questions/thoughts do you have?

